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## Valorisation of a local asset: The case of olive oil on Lesvos Island, Greece

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## ABSTRACT

Agri-food products are more and more considered and treated as valuable local assets. The valorisation of such local assets is an issue of great importance, especially in disadvantaged areas. In this paper, the case of the olive oil of Lesvos Island in Greece is presented. We seek to analyse the supply chain and examine the benefits that are distributed to its various actors by comparing three different olive oil products: PGI, organic and conventional olive oil with the use of two dimensions: size of production and success of the producers. The data come from quantitative and qualitative research to different actors across the supply chain and from published and unpublished local and national sources. The findings indicate that olive farmers are “cut-off” from the benefits of the products to a great extent. Small bottlers are the ones that receive the most benefits, as they can ignore big retailers. Overall, the absence of consensus and common management between the different actors, along with a complex and very competitive international market create uneven impacts.

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## Introduction: Agri-food products as local resources and their valorisation in the EU and Greece

The intensification of agriculture and the standardisation of food production have been blamed (Ilbery and Kneafsey, 2000) as some of the causes of major food safety crises that broke out after the 1980s. These crises coincided with a more general awareness of consumers towards regional agri-food products (as demonstrated e.g. in the growing sections of supermarket space devoted to ‘local’ and/or organic products), ‘re-localising’ a growing part of food production and shifting consumers’ attention towards food products that can be traced to particular people and places (Moschini et al., 2008). Such products can be differentiated on a basis of environmental (e.g. organic products), hygiene (e.g. nutritional, wholesome products) and socio-cultural characteristics (e.g. local, traditional products) (Ilbery and Kneafsey, 2000).

The Common Agricultural Policy (CAP) of the European Union (EU) initially placed little importance on food quality, safety and the protection of regional agri-food products. In the 1990s, it launched the so-called quality agri-food policy, which differentiates quality agri-food products from conventional ones with reference to a specific production technique or style of farming (e.g. organic products) or by linking them to specific localities (e.g. geographical indications – GIs). GIs include the Protected Designation of Origin (PDO) and Protected Geographical Indication

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(PGI) products. Their number increases: 669 products in the EU-25 (385 PDOs and 283 PGIs) were registered up to 1/9/2004, 820 (453 PDO and 367 PGI) by 26/01/2009 ([http://ec.europa.eu/agriculture/agrista/2008/table\\_en/42491s1.pdf](http://ec.europa.eu/agriculture/agrista/2008/table_en/42491s1.pdf) accessed at 01/07/2010) and new ones add up constantly (although the greatest part of this sharp increase should be attributed to products from new Member States). Geographically, Southern countries (France, Italy, Portugal, Spain and Greece) still account for 80% of the total products (655 PDOs and PGIs) and register new ones. The case that is presented here is based on the valorisation of one of these products (a PGI olive oil), compared to the rest of the olive oil products in the same area.

The conception of GIs has been based upon some assumptions (European Commission, 2004):

- That some consumers can shift their preferences from price, package, advertising and appearance to symbolic links with places or spaces.
- That alternative geographies of food emerge (Renting et al., 2003; Winter, 2005; Wiskerke, 2009) resulting in new regional and local food complexes.
- That the incomes of farmers and local processing businesses can be improved through the localisation of production, e.g. by retaining a greater part of the value added of the products through the elimination of intermediaries and protection from competition (Morgan et al., 2006).
- That since these products are produced on traditional small-scale farms in traditional landscapes (Parrott et al. (2002) claim that 70% of PDOs and PGIs in the EU-15 originate in

Less Favoured Areas (LFAs)), the growing demand for those products can be used to preserve landscapes of Europe's marginal farming areas (Gilg and Battershill, 1998), an environmental benefit in itself (Tregear et al., 2007).

- (e) That other social benefits arise, including the preservation of traditional know-how, cultural and culinary tradition (Tregear, 2003).

All these assumptions include potential economic and social benefits not only to the delimited areas and to the producers and local actors of the supply chain, but also to the rest of the local businesses and the population of the area. In this sense, GIs can be regarded as a local resource for these areas (Sonnino and Marsden, 2006).

For those immediately involved in the supply chain of a GI the product is a common asset encompassing real and symbolic dimensions: the real dimensions refer to the actual results of production, such as raw materials, processing techniques, and volume of production. The symbolic dimensions refer to the 'name' and the reputation of the product, to the symbols and connotations it entails. The management of this common asset and its valorisation involves both of these dimensions. There are many forms of common management: from forms where a union, a cooperative or an inter-professional association controls the production, processing, standardisation and part of the marketing of the product (e.g. Roquefort cheese, Quetier et al., 2005); to forms where very little or none common actions are practised by the actors of the supply chain (producers, processors, marketers and retailers, e.g. Vakoufaris, 2010). Many different forms can be met in between these two extreme cases.

For the rest of the local actors outside the supply chain and for the population of the area, the product can be more than an economic activity that provides income and jobs: it can be a part of the local identity and social relations of the area (Tregear, 2003; Brunori and Rossi, 2007).

The valorisation of a commodity is to assign value or merit to this commodity (Meriam-Webster dictionary) or to create surplus value for it (Wiktionary). For a local product it can be assessed in three dimensions: economic, social and environmental. Fonte (2008) stresses that economic valorisation is the "dominant dimension of sustainability in a strategy of integrated rural development for marginalised and impoverished areas" (p. 209). Social dimensions of valorisation according to Fonte (2008, p. 209) "require a collective effort that activates mechanisms of social coordination and cohesion in the community". Finally, environmental dimensions can refer to special characteristics of the area, which can embrace wider environmental characteristics linked with the symbolic value of the product and not just local varieties of plants or breeds of animals (Fonte, 2008).

In some of the reportedly successful examples of PDOs and PGIs, the positive impact and potential economic and social valorisation of the product seems to be related with the involvement of local actors which are not part of the supply chain. Quetier et al. (2005) link the success with 'closed' forms of common management, de Roest and Menghi (2000) with cooperation and Tregear (2003) with a wider understanding of quality from local actors. A successful Greek example (Mastiha PDO products) discussed by Vakoufaris and Kizos (2011) involved the mobilisation of local actors which were not part of the supply chain that intervened to the 'rescue' of unsuccessful local practices. By utilising the symbolic dimension of the product they have achieved positive impacts to the producers and the area as a whole. Unsuccessful examples are given by Vakoufaris (2010) where in most cases those immediately involved, let alone the rest of the local actors, fail to realise and use the 'symbolic' aspects of the product.

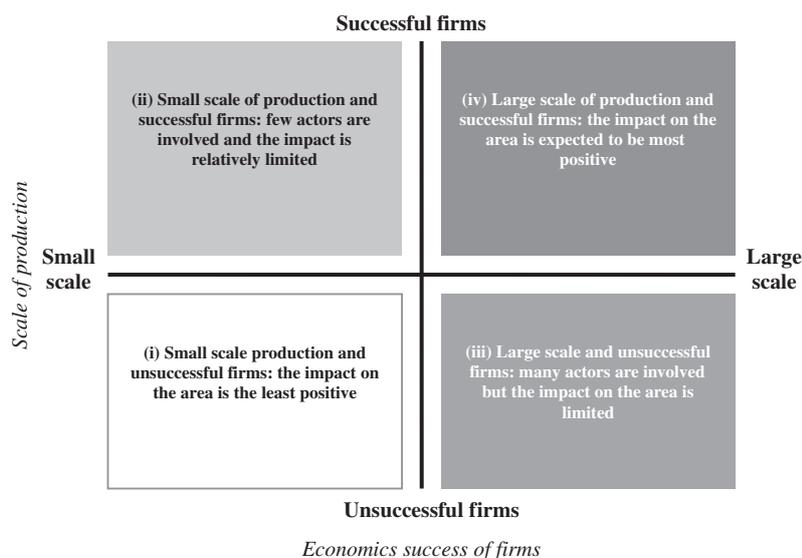
Other important factors apart from the involvement and common management of the resource include the choices and the suc-

cess of the farmers and/or businesses that produce it, as for the same product and area different producers will have varying success. The scale of production in relation with the size of the area and the size of the farming and agro-food sector is another vital component (Tregear et al., 2007; Brunori and Rossi, 2007). Finally, external factors to the area may refer to broader socioeconomic changes (e.g. international economic crises, global competition from substitutes, etc.).

The main conceptual framework of the paper is based on a combination of the Conventions Theory (CT) and the 'worlds of production' and 'rural development' models. In the former, conventions are considered as social norms, accepted rules of behaviour resulting from repeated interactions among economic and social actors that bind acts together through mutual expectations (Murdoch et al., 2000). Goodman (2003) considers CT and Actor Network Theory (ANT), as the cornerstones of the ongoing approach for understanding local/global and 'quality' in food production and rural space, since ANT suggests that three sets of actors (producers, institutions and consumers) are engaged in a constant process of alliance-building to enrol allies into their networks through a process of representation of their own perceptions, needs or wants in relation to these products. 'Worlds of production' according to Storper and Salais (1997, p. 20, emphasis in original) constitute "for economic actors (individuals and firms) the expected coordination of activities of production and exchange, where the expectations are the result of convention, which is in turn in recurrence or precedent". Worlds of production in terms of the types of products and their associated elementary frameworks of action are (p.21–2): the interpersonal world (of specialised and dedicated products, made according to the desires of buyers); the market world (of standardised but dedicated products); the industrial world (of mass production); and the world of intellectual resources (world of creation). Authors that use CT in food studies include, among others, Rosin and Campbell (2008) who examine the development of organic farming and map the complexity of organic production in New Zealand with the use of 'worlds of justification'. Sánchez-Hernández et al. (2010) use CT and the worlds of production for a regional production system of a wine and discuss how conventions change and how such changes spread along the chain with the use of three factors, namely the organisation of the production chain, food differentiations according to geographic origin, and supporting a regional innovation system.

Finally, the 'rural development' model is a response to the negative effects of standardisation and intensification of food production and rural space in general, based on endogenous resources with the assumption that mobilisation of local resources (natural, human, cultural, social) is the best choice for balanced and lasting development. It postulates the reinforcement of agriculture, embedded in the territory and being in the centre of a network of linking activities (Marsden, 2003).

Drawing from these insights, we conceptualised valorisation for an area into two distinct dimensions: (a) the scale of production of the particular product; and (b) the economic success of the individual firms that produce it. The scale of production can vary from the very small (e.g. that of some farms or some firms) to the very large (e.g. the national or even the international scale). Scale is a relative issue here and is related with the size of the area and the sector, as large scale for an area may be small for another. The success of the firms that produce the product can vary from the unsuccessful (i.e. firms that barely survive or will have to close), to successful and competitive ones. Success here is again relative, as it may refer to different units according to the particularities of the sector or the area. It can involve viable farms or competitive and profitable processing – marketing units or both. It therefore has to be defined specifically for each case study according to these particularities.



**Fig. 1.** Theoretical categories of the impact of local products on the area they are produced in and worlds of production based on the scale of production and economic success of producing firms.

The combination of these dimensions yields four different cases or 'worlds' (Fig. 1): (i) small scale production and unsuccessful firms, where the impact of the production on the area is limited, even in cases where the scale of the firms is large; (ii) small scale production and successful firms, where the impact on the area is again relatively limited despite the fact that the producers perform well, as it involves relatively few local actors due to its small scale of production; (iii) large scale and unsuccessful firms, where the impact of the production on the area is important but rather limited; (iv) large scale production and successful firms, where the most important positive impacts are theoretically expected. These four cases provide a conceptual context in which this paper is placed. It has to be noted that the valorisation for a particular area and product could stretch to more than one case (as the case study will demonstrate). This is again linked with the complexities involved and for the same area and product the impacts may be diverse and unequal according to different productive choices and trajectories of the involved along the supply chain. Moreover, this context covers the 'real' dimensions of the product and the rest of the insights (symbolic dimensions, common management, etc.) have to be added and discussed after the production is placed in Fig. 1. This conceptualisation is similar to the 'worlds of production' in the sense that four distinct worlds are defined, but real cases 'do not necessarily fit neatly into simple typological frameworks' (Marsden et al., 2000, p. 430).

This paper focuses on the valorisation of olive oil on Lesvos Island in Greece. The particular product is a very important economically and symbolically local resource. We compare three different olive oil products: PGI, organic and conventional olive oil and analyse the different supply chains, examine the economic, social and in a lesser degree environmental benefits and place them on the conceptual context presented above. The research approach is presented in the next section, followed by the olive oil production on Lesvos and the valorisation along the supply chains. Then, we discuss the findings and some wider implications and conclusions.

### Research approach and data

The questions that this paper attempts to answer are related to the issues of the valorisation of a local agri-food product and its impact on the area where it is produced (Lesvos Island). To do this

we: (a) present very briefly the supply chain of the different products and discuss patterns of value along these chains; (b) discuss the economic, social or environmental benefits and; (c) on the basis of these findings, place the products in Fig. 1.

This line of argument is largely based on the pioneer study of supply chains by Marsden et al. (2000) who use a similar approach to 'better judge the extent to which rural actors – whether they are farmers, processors and retailers – can create additional value for rural regions' (p. 426, emphasis in original). They concentrate on temporal, spatial, demand and associational – institutional evolution of supply chains and their dynamic characteristics, including the placement of their case studies in the different 'worlds of production' (Storper and Salais, 1997). These stretch over a standardisation – specialisation axis and a dedicated – generic one, which we modify in our approach (Fig. 1). We use the same lines of investigation for temporal, associational and institutional evolution of the different products and broaden their economic assessment of the overall impact to cover social and environmental impacts as well. The five stages of the supply chain (agricultural production, food processing, food wholesaling, food retailing and food catering) are based on Yakovleva (2007) representing "a sequence of economic activities, through which resources, materials and information flow downstream and upstream" (p. 76). The visualisation of the supply chains (Fig. 2) is based on de Roest and Menghi (2000).

A number of issues emerged during research planning. One of the most important ones was the amount of quantitative data required to assess added value across the supply chain and qualitative data to complement the overall analysis. The second issue was linked with the first and referred to which of the actors involved would be contacted. For the type and amount of data, we opted for a combination of quantitative and qualitative data, unlike quantitative approaches (e.g. Yakovleva (2007) with sustainability indicators for all actors at each stage). Instead, we adopted an approach closer to Ilbery and Maye's (2005), combining quantitative (volumes, prices, etc.) and qualitative (perceptions, practices and choices of the actors) data, but for each part and not for the whole chain. Tregear's (2003) approach that discusses in detail the economic and social benefits of different products was also used, while we also used input from Vakoufaris and Kizos (2011) that discuss and compare the overall success and some impacts of different GIs with mention of scale of production and market success.

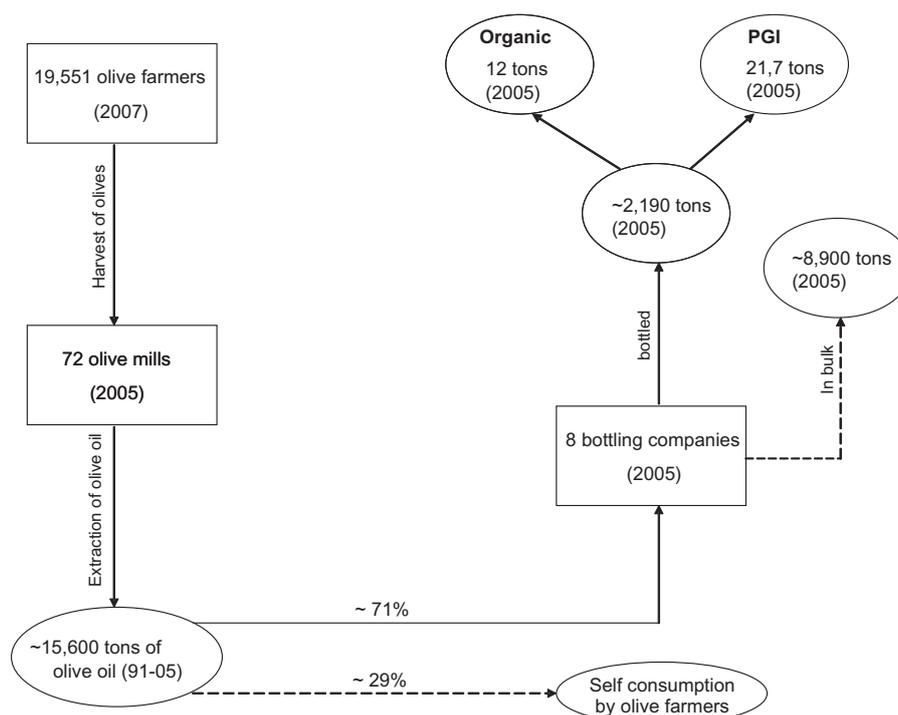


Fig. 2. The supply chain of the olive oil produced on Lesvos.

For the second issue, a typical supply chain in our case study involves olive farmers, olive mills, bottling companies and/or wholesalers, and retail shops. Farmers are by far the more numerous actors (more than 15,000), but surprisingly they play a minimal role in the chains (see section “Olive oil production on Lesvos”). Therefore, we decided not to survey them and instead based our analysis for this part of the chain to their overall practices concerning the sale of their oil, and to our previous research on management practices (e.g. Vakoufari and Kizos, 2011; Kizos et al., 2010; Vakoufari, 2010). Olive mills play also a marginal role, but we contacted two of them in order to clarify their role. All eight bottling enterprises on the island at the time (2005, some sell also in bulk as wholesalers) were interviewed in order to investigate the significance of each product (conventional, organic, PGI). Today, four small ones have started their business in the organic oil chain and we spoke with two of them in 2010. Two retailers were also contacted (major super markets) that cover national and local markets. Some key actors were also interviewed in 2007: the Department of GIs in the Ministry of Rural Development and Food (MRDF) in Athens, the public certifying body AGROCERT and again the Union of Agricultural Cooperatives of Lesvos (UACL) that plays a pivotal role in the chains.

All these interviews were face-to-face (with the exception of the MRDF) using different semi-structured questionnaires. For bottlers, we recorded quantitative data on costs and revenues and qualitative data on the type of the chain they use and the reasons behind these choices. Price differences across the chains and profit margins were also recorded when that was possible. Qualitative opinions and views on supply chains, the institutional framework and the key reasons of success were used to supplement the analysis and fill the important gaps that arose due to the lack of knowledge or cooperation from the people that were interviewed. The analysis was mainly descriptive due to the small size of the population and the diverse nature of the data collected (e.g. a small family company compared with the UACL). Value across the chain was

estimated primarily from profit margins, which were derived by comparing prices along the chain. On many issues, such as costs and revenues, direct comparisons were not always feasible and we had to rely on comments of the respondents and qualitative data from the questionnaires. Where and when available, we provide secondary data to support the analysis. For downstream parts of the chains the interviews were conducted with an open list of questions and the analysis of value was not always possible, due to the complex ways of setting prices among others, and a more qualitative approach was employed based again on the prices, but costs were not taken into account. For the rest of the actors almost all data collected were qualitative. Social impacts were estimated qualitatively from the interviews of the various actors and taking into account the scale of each actor. Environmental impacts were estimated again from the interviews for both the management of waste (a severe problem locally) and the promotion of sustainable farming practices. Finally, the products were placed on the ideal ‘worlds’ of Fig. 1 with the use of both quantitative (especially for the scale of the actors in each chain, but also for success on the basis of profit margins) and qualitative (for the relative success of the actors) data.

Research data are of 2005 for bottlers and olive mills, of 2007 for downstream actors and again in 2010 for the new bottlers. Historical and more recent secondary data are mentioned when these are available and relevant. The rest of the data come from: academic literature; the so called “grey literature” (newspaper articles, personal communications, web-sites, unpublished documents); and our own experience. The academic literature provided historical production data, the history of the olive production on the island and key information on the processing. The ‘grey literature’ provided prices, historical volumes of production, a better understanding of institutional issues and local politics that affect local actors and the supply chains, information on new businesses and their successes, etc. The data for the single farm payment were obtained from the files of the supervising body ([www.e-enisxyseis.gr](http://www.e-enisxyseis.gr)).

## Olive oil production on Lesvos

The case study area is Lesvos Island (1632.8 km<sup>2</sup>, c. 90,000 inhabitants, 40% in Mytilini, the capital). Olive plantations are among the most important land uses, along with shrublands, open forest areas and pine forests. The significance of olive cultivation on Lesvos rose rapidly after the 18th century (Kizos and Koulouri, 2006). The marginalisation of the booming, until then, island economy in the 20th century marked the beginning of the rural exodus (–35% between 1940s and 1980s, today slightly increasing). Olive plantations were the only cultivated land use that increased slightly during this time as new ones were planted and others were abandoned (Kizos and Koulouri, 2006).

Geographically, olive plantations are mainly located in the eastern part of the island, following roughly the geological and soil differences, as the Eastern and Northeast part is more fertile and wet compared with the Western part. The olive plantations constitute, in their greatest part, a homogenous landscape, very characteristic for Lesvos and part of its local identity, with most trees lying on small, hilly or mountainous and sloping terraced fields. Farming is still quite an important economic and social activity and many farmers consider their olive fields as a family asset (Kizos et al., 2010), even though many of these farms are part-time or hobby ones. According to the files of the single farm payment (SFP) the total number of farmers eligible for subsidy in 2007 was 20,548, 95% of which have at least one olive field of 47,901 ha (c. 30% of the total area of the island). Most of the olive plantations encountered on the island are low-input traditional plantations of low tree densities and managed with few or no chemical inputs, limited irrigation, but with a high labour input according to the typology of Fleskens and de Graaff (2008).

The supply chain of all three products includes: olive farmers; olive mills; bottling companies; and retailers.

Olive farmers are according to the SFP files 19,551, with an average farm size of 2.4 ha, but 31% are smaller than 1 ha. They are aged (59 years old in average) with a mere 10% younger than 40; 37% older than 65; and 19.2% older than 75. All of them produce conventional and potentially PGI olive oil. According to the MRDF data ([www.minagric.gr](http://www.minagric.gr)), organic farmers on the island were 2107 in 2007 with a steady rise of 700% since 2002 and 44.3% since 2005. The number of organic olive farmers is unknown, but according to some of the certification bodies most of the organic farmers are organic olive farmers. Organic plantations covered in 2007 an area of 12117.5 ha (78% of the total organic area), nine times greater than 2002. The average farm area is significantly higher than that of the conventional farms (5.75 ha/farm in 2007), reflecting the fact that many conventional farmers are part timers, may even live in other areas of Greece and not on the island, with very small farms, but also the higher cost (e.g. payment of certification body) of “turning organic”. The number of PGI producing farms is unknown (details later in the text). Farmers are organised on 62 first-degree and one second-degree co-operative: the UACL that is the key player in the supply chains.

The subsidies that farmers receive are of five different types (Table 2 for money range and specific requirements): (a) the SFP, based on the farm's olive oil production during the reference period of 1999–2002, received by all farmers; (b) the payment for the maintenance of olive groves in traditional olive-growing zones received by all farmers; (c) the compensatory payment that can be received by farmers younger than 65 and a family income at least 25% from farming; (d) the additional payment for specific types of farming and quality production (EU Reg. 1782/2003, Art. 69) for PGI and organic olive oil producers only, abolished by a recent decision (31/07/2009) by the MRDF; (e) the organic farming subsidy.

The olive oil produced on Lesvos fluctuates between 2496 and 38,127 tons during 1991–2004 (Table 1) due to the interchange of productive/non-productive years. Biannual averages smooth out the differences, but they remain important. Weather conditions, especially droughts, and the extensive management are responsible for these differences and the steady rise of the mean after the mid 1990s can be attributed to the abundance of cheap labour by immigrant workers that arrived during that time and facilitated the harvesting of the olives, especially for older and part time farmers.

Next in the chain are the 71 olive mills (41 of which are owned by co-operatives). Their role in the overall chain is rather limited: they press the olives, extract the oil and store it for the farmers for a fee that is paid either in cash or in oil that is sold by the mills or handed to other sellers, even the UACL. A few of the mills (2 during the time of the research; four more have emerged since) are also bottlers. Some of these mills process PGI and/or organic olive oil exclusively or in combination with conventional one. Mills extract “potential” PGI olive oil (they even issue producer lists for the additional “quality” payment for PGI and organic farmers), but whether this oil is actually sold as PGI or conventional depends on the choices of bottlers and traders and not farmers (this means that they may receive the PGI payment even if their olive oil is not sold in the end as PGI).

The supply chain gets very complicated after the extracting of the olive oil. There are three different options for farmers (Fig. 2): (a) to consume their own olive oil or to sell it in bulk to friends and relatives; (b) to sell it in bulk to a wholesaler or to a private bottling company; and (c) to give it to the UACL to sell it, either in bulk or bottled. Organic farmers usually sell their oil as conventional to the UACL or as organic to a small bottler. This complexity does not imply that farmers have many options and can choose rationally between them: most just give their olive oil to UACL or a wholesaler and expect a payment. For buyers, the options are equally complex and may change according to market prices and production shortages/surpluses in other producing areas in Greece or abroad: (a) they may sell in bulk to Italian wholesalers or bottling companies; (b) they may sell in bulk to continental Greece wholesalers or bottling companies; and (c) they may bottle the product and sell it themselves.

From the 12 bottling companies operating today (two owned by co-operatives) the UACL handles most of the olive oil produced on the island and is used as a yard stick by all other actors in terms of prices for all qualities of olive oil (determined by acidity): two companies offered exactly the same prices, while the rest offered

**Table 1**  
Olive oil production in the Prefecture of Lesvos during 1991–2004 (in tons).

Olive year	Production (in tons)	Annual change%	Biannual average (in tons)	Biannual average change%
91–92	16808			
92–93	7471	–55.6	5932.0	
93–94	4393	–41.2		
94–95	2259	–48.6	5357.5	–9.7
95–96	8456	274.3		
96–97	32384	283.0	18903.0	252.8
97–98	5422	–83.3		
98–99	38127	603.2	22806.0	20.6
99–00	7485	–80.4		
00–01	26239	250.6	14367.5	–37.0
01–02	2496	–90.5		
02–03	29402	1078.0	17694.5	23.2
03–04	5987	–79.6		

Source: Niaounakis and Halvadakis (2004), processed by the authors.

**Table 2**  
Different categories of payments to olive farmers under the new CAP on Lesvos.

	Amount of money	Conventional	PGI	Organic
Single farm payment <sup>a</sup>	Based on olive oil production during the reference period (99–02) Average 2007: 2267€/farm, median: 796€/farm; 88% receive less than 5000€; 1% receive more than 20,000€	✓	✓	✓
Maintenance of olive groves in traditional olive-growing zones (EU Reg. 1405/2006 and 1914/2006) <sup>b</sup>	145 €/ha	✓	✓	✓
Compensatory payments <sup>c</sup>	65–80 €/ha	✓	✓	✓
Additional payment for specific types of farming and quality production (EU Reg. 1782/2003, Art. 69)	<650 €/ha <sup>d</sup>		✓	✓
Organic farming <sup>e</sup>	722 €/ha			✓

<sup>a</sup> Each farm plot must be at least 0.03 ha.

<sup>b</sup> Each farm plot must be at least 0.01 ha.

<sup>c</sup> The maximum payment reaches 5000–5500 €. At least 25% of the total income of the beneficiary must come from farming. The beneficiary must not have more than 140 day's wages from other activities.

<sup>d</sup> In 2006 this payment was 330 €/ha while in 2007 it was 210 €/ha. In 2008 the payment reached just 110 €/ha and during 2009 (31/07/2009) the Ministry of Rural Development and Food decided to abolish the measure.

<sup>e</sup> The farm must be at least 0.3 ha. Each farm plot must be at least 0.05 ha. The amount of the payment when the olive groves are used for the production of table olives is 900 €/ha. However the vast majority of the olive groves on Lesvos are used for the production of olive oil.

only slightly higher prices (from 0.029 €/l to 0.073 €/l). Their “competitive advantage” lays in faster payments than the UACL (which can delay for months).

The quantities bottled (2005 data) were: 1200 tons by the UACL or 25% of the olive delivered to it by farmers, 55% of the total bottled production on the island and c. 10% of the total production of the year; 90 tons or 4.1% of the total bottled production by the cooperative of Stipsi and 890 tons by the other companies. The overall bottled quantity amounts almost to 13% of the total olive oil of the year and the choices of the bottlers varied: two of them (n. 6 and 7, Table 3) bottled all the olive oil they sold, but the quantities were small; the rest a part of it, as little as 1.5% for n. 3. The rest was mostly sold in bulk (c. 60%) or self-consumed by farmers (27% or around 4500 tons). This yields 220 l/farm, and with an average of 3.5 members per farm household (based on the 2001 population census data) and an average consumption of 16.7 l/person/year (Scheidel and Krausmann, 2011), approximately 160 l are sold directly from farmers through trust based networks or given to relatives. The prices are higher than wholesale and lower than retail and represent a short-circuiting of the supply chain beneficial for both parties. But, this practice can be viewed as partly responsible for low bottling rates. Organic olive oil was bottled and sold only by one company (n. 7) in 2005, now by four more, and amounts to 0.5–1% of the total bottled quantity and only a small amount of the total organic olive oil which is produced, the rest being sold as conventional oil (as it happens with the PGI). This is the result of two issues: many farmers seem to be interested only in the extra organic payments; organic presses are not available everywhere. Only two companies bottle PGI Lesvos olive oil, the UACL (B. 4) and B. 8, both in small quantities: c. 22 tons (1% of the total bottled quality) in 2005 (Table 3).

Data for the quantities of bottled olive oil reveal that these remain relatively stable until today for conventional and PGI oil, but the quantities of organic, which is only sold bottled, have been increasing after 2005. This seems to imply that bottlers consider these quantities as optimal and do not dare or care take risks. No Interprofessional Organisation of producers or some sort of common organisation where common problems could be discussed and common actions taken exists, even for the PGI product. This lack of a common approach to olive oil is evident from the lack of initiatives for promoting olive oil to tourism related services, especially restaurants and breakfast/food facilities of hotels and rented rooms. Other local actors, not immediately involved in the supply chain are also absent to a large degree from forms of common management.

### Economic, social and environmental valorisation along the supply chain

The economic valorisation of the products for Lesvos depends on the prices that the most numerous actors, farmers, receive. These prices are determined to a great degree from international olive oil prices. Even when smaller bottlers achieve higher prices of the end products this does not seem to affect significantly the prices that farmers actually receive since bottlers do not pass these profits to farmers. This is related to the small size of these more successful bottlers and to the fact that the UACL can always serve as a “safety net” for farmers (it is obliged to buy the olive oil of its members). There is no difference in farmer prices between conventional and PGI producers and curiously enough even between conventional and organic farmers, as acidity is the main quality indicator for olive oil and organic farmers are compensated for

**Table 3**  
Olive oil (in tons) which is bought and distributed by the bottling companies per quality category (2005).

Company	Olive oil bought or extracted by the bottling companies			Standardised olive oil and olive oil in bulk which is distributed by the bottling companies					
	Extra virgin	Virgin	Lampante	Extra virgin	Virgin	PGI	Organic	Olive Oil <sup>a</sup>	In bulk
B.1	24.0	216.0	560.0	5.0	85.0	–	–	–	710.0
B.2	600.0	420.0	180.0	300.0	–	–	–	–	900.0
B.3	750.0	1200.0	1050.0	25.0	25.0	–	–	–	2950.0
UACL (B.4)	848.8	1302.7	2763.7	226.0	484.3	11.7	–	481.4	3711.8
B.5	337.5	337.5	75.0	6.0	54.0	–	–	–	690.0
B.6	28.0	42.0	–	28.0	42.0	–	–	–	–
B.7	12.0	–	–	–	–	–	12.0	–	–
B.8	210.0	120.0	70.0	200.0	120.0	10.0	–	70.0	–
Total	2810.3	3638.2	4698.7	790.0	810.3	21.7	12.0	551.4	8961.8

<sup>a</sup> Composed of refined olive oils and virgin olive oils.

their economic loss by the relevant subsidy. Farmer prices are very low compared to the price of the end product (approximately 35–50% of the end product price) and barely provide a viable income to farmers, although the various subsidies provide additional income. It seems therefore that farmers are “cut-off” from the overall added value that their product achieves in the market. The failure of collective forms of marketing stands also out.

Bottlers claim that profit margins from bottled olive oil is the main reason behind small bottling quantities, but this is not supported by the facts as e.g. for company B. (Bottler) 3 the profit margins from bottled olive oil are 0.88 €/l compared to 0.08 €/l for bulk, while for B. 1 the difference in favour of the bottled oil is 0.58 €/l. But, both producers wave the flag of a secure and immediate small profit from bulk olive oil to the uncertainty and long term gain from the bottled product: “*all the times I tried to enter the bottled market my profits could not cover the super market rents [i.e. the extra money usually paid in tonnage that supermarkets require to place a product on their shelves]. What am I to do? Bottle to make the super markets richer?*” (B. 3).

Interestingly, all bottlers claim that their own profit margins are very small compared to those of the retailers. “*They [the supermarkets] get all the profit; they have profit margins of around 40%*”, remarked a small bottler (B. 2). Small producers can afford to ignore supermarkets and all organic olive oil bottlers market their products in selected small outlets in Greece and abroad. But, this is not an option for the UACL. The view of the supermarkets is un-supportive, as someone might expect, of such assertions. The marketing departments of two major retail chains in Greece stress the “*fierce competition*” of the market and try to shake from their shoulders the weight of those who gain most of the added value of the products. Nevertheless, their practices include the demand of huge price cuts for shelf placement or a fixed percentage of the bottlers’ profits each year. Moreover, they pay bottlers typically after 4–6 months.

Precise calculations of added value along this part of the chain are very difficult as there are many different sizes and brands of the same products (e.g. the UACL markets five different sizes, from 0.25 to 5 l, and three different brands of their products). As already mentioned, farmers receive typically low prices (30–40% of the end price) for a product with no processing after the pressing of the olives. The profit margins that bottlers receive range from 5% for bulk to 15–35% for bottled olive oil depending on the type of product and the type of distribution chain. Practically for the same product the end prices that e.g. the UACL sells are very different: the price of a lit of PGI oil is 24% higher than the conventional extra virgin oil and 131% higher than the oil sold in bulk. The economic valorisation therefore seems lower than the one that could be achieved. Despite this, our UACL respondent (B. 4) stressed that “[The PGI] is not known to the consumers. Its price premium is not important. It all has to do with consumer preferences”, a rather short-sighted view that is not shared by the other small producer (B. 8) that is satisfied by the product: “[The PGI] provides a comparative advantage as far as the marketing of the product is concerned... it is not been supported by our company or by the local authorities”.

The rest of the bottlers question the effectiveness of the PGI designation and say that only retailers yield the extra profit from the scheme: “*It’s all a matter of demand and supply, and not a matter of the PGI. If buyers want your product, then the price goes up. If someone makes any profit out of the scheme then it’s the retailers and not us*” (B. 4). The owner of an organic olive oil company, which shifted production from PGI to exclusively organic oil, believes that his company has little to gain by the parallel use of both the PGI and the organic labels (B. 7): “*Why should I use the PGI? It does not ‘add’ to the product*”. This advantage of organic over PGI olive oil is corroborated by the four new small companies that have started after 2005 and sell exclusively organic oil.

All these four are family companies of farmers (all pluri-active) that decided for a variety of reasons to start selling their own olive oil and all have benefited from financial aid for their investments. One owns tourism holdings as well. Another one runs an agrotourism farm and pension and eventually decided that bottling and selling their organic olive oil would increase their earnings. They sell the product through their agrotourism activities, through the internet and to selected small outlets in Greece as their production is rather limited (a few tons depending on the season) and have won a taste award in Greece (interestingly both partners of the family are elementary school teachers). The other three bottlers had their farms and mills and decided to bottle. One is also very small, selling the few tons produced mostly in Germany through three outlets and through the internet. The price is more than double of the conventional olive oil and regular customers pre-order most of the limited supply. The other two producers are larger, both with quality awards and sell to small outlets in continental Greece and on the island (mostly in shops for tourists). The first one markets two different brands of 5–6 different bottle sizes. One of his motives was the price that organic oil from Lesvos bottled in France is being sold (250 ml at 18€ in 2010 or ten times the price in a super market). Although he has not managed to achieve that price, he is very satisfied by the result. Their success expresses the potential of more successful economic valorisation, but at a small scale.

The Department of the MRDF responsible for PDOs and PGIs declared ignorance concerning the quantities of Lesvos PGI olive oil produced or its supply chains, prices and the valorisation of the product in general (the same is true for most PDO/PGI products). The director was reluctant to discuss issues of valorisation and how the impacts locally could be more positive and kept referring to ‘official designations’ that ‘all PGI/PDO products are national products’ and that valorisation is a local issue. AGROCERT makes sure that mills and bottlers can produce PGI olive oil and periodically inspects the units. Our respondents in the organisation viewed their part as mostly inspecting, but were willing to cooperate with local stakeholders to develop an integrated management system for olives that could help, according to them, improve economic valorisation.

## Discussion

For farmers, the economic valorisation is very low, with the exception of the small organic farmers – bottlers. Social valorisation is important, as olive farming is viewed by many farmers as a ‘social condition’, a family tradition and part of local identity rather than a livelihood and the fact that many farmers are part-timers is the proof. Some farmers even keep managing (extensively) their olives even at a loss or with a very small profit margin (Kizos et al., 2010). Environmental valorisation is also positive, as the extensive management systems practised on Lesvos are not detrimental if not immediately beneficial for biodiversity and the use of resources is moderate. Organic farmers – bottlers prove nevertheless that alternatives are possible (perhaps unsurprisingly all of them are pluri-active with a broader view), but their success only highlights that more active involvement of farmers is required. Even these cases are only a very small part of the organic farmers of Lesvos that lose a major part of the potential economic value of their products. This is the result of the fact that the growth of organic cultivation on Lesvos seems to be mostly driven by the agri-environmental payments that they receive. That fact that management is based on labour and not artificial input makes the conversion to organic relatively easy. Therefore, farmers convert their fields, but without ensuring the marketing of their product as organic. Since many mills cannot offer separate pressing

lines and the UACL is not interested in organic oil they are forced to sell their oil as conventional, which is a loss on many levels. The rest seem to be reluctant to take the risks of investing and marketing the product. This is in agreement with the findings of Morgan et al. (2010) that present the differences of the valorisation at the level of farmers for two different areas and demonstrate how different social, cultural and local situations affect entrepreneurial skills and risks that farmers are willing to take to short circuit conventional supply chains. The recent successes (for wine and cheese as well) could provide examples and yield more benefits to farmers and other local actors (Brunori and Rossi, 2007; Vakoufaris and Kizos, 2011, present examples).

The subsidies that farmers receive seem to allow them to maintain their livelihoods and a particular status quo, reducing the incentive to do things differently. On the other hand, in peripheral and disadvantaged areas such as Lesvos, the abolishment of subsidies would result in less farmers and abandoned plantations. It may also bring forward more effective economic valorisation, but at a very high social cost. This seems to be common with many other areas and productions in LFAs around Europe.

For the rest of the bottlers, the pivotal role in the supply chain of the UACL and its size could theoretically offer many advantages. As Quetier et al. (2005) and Vakoufaris and Kizos (2011) propose, the domination of the supply chain by a single actor can strengthen that actor, resulting in theory in the appropriation of greater part of the added value with positive results for the rest actors, while otherwise non local actors can appropriate part of the value as Fonte (2008) reports. The UACL operates under enormous pressure from both the side of farmers and of retailers/markets: farmers regard it as a 'safety net' that will buy their oil and providing optimum prices and immediate payments. At the same time, its operational structure and decision making are non flexible. The response to criticism of its inability to exploit the potential of the PGI and increase the farmers' prices is exactly that: 'we need cash for the farmers (that retailers offer albeit at low prices for bulk) and it is difficult to address the competition of the bottled market' (retailers have expensive requirements for bottled oil). This leads inevitably to the under valorisation of the economic value of this resource for the island. Smaller bottlers can utilise their small size advantage to find and sustain niche markets and obtain better prices and higher valorisation. Socially, valorisation seems to be continually reduced due to low economic valorisation: local olive farming tradition still keeps farmers active, but land is abandoned and management depends now very much to workers. In environmental terms, the treatment of waste is an important issue seasonally and locally, but there are no differences between the three products. In this setting, common management seems unlikely.

Common management is given great importance in the literature. Brunori and Rossi (2007) discuss the successful involvement of local actors in a local product (wine) and the economic and social benefits of actors that are not part of the supply chain. The building of local capital is viewed as a strong component of this success: "In this process, local actors create alliances within and outside the area and try to align non-human elements (namely wine, the landscape, the name Chianti and the black cock logo themselves) into their actor networks" (p. 203). Tregear et al. (2007) investigate the success of qualification of local products "as part of an extended territorial strategy" with mixed results, the more successful ones having benefited by "interaction and debate, and setting up of interest groups", but it also can be a "source of conflict between different actors" (p. 21). On Lesvos, Vakoufaris (2010) discusses the failings of common understanding and management in a smaller scale in the case of a cheese PDO. The case of olive oil is not positive in terms of common understanding and management and of the involvement of other local actors and the use of the 'symbolic' aspects of the product. All of our

respondents when asked directly found such actions positive in theory and would participate, but none were actually positive to start such an initiative themselves. The small producers shield themselves behind their relative success and their precious and hard to build supply chains and the UACL seems to believe it can alone safeguard the interests of farmers and is unwilling to admit that small players could be equal partners. Other local actors, such as the Prefecture or the Region, seem unwilling to mediate or lead or offer a common table for discussions and actions. National actors and even the MRDF are also unwilling to step in and attempt to suggest common thinking. This is especially true for the PGI that is considered (especially by the UACL) as a 'different' product from conventional olive oil. During our interviews with several key people in the UACL it was clear that no one did actually realise that the PGI is a tool for all the olive oil production of Lesvos and not just another product. "But people do not know it and don't ask for it" was a typical answer. This agrees with the findings of Tregear et al. (2007) and of Tregear (2003) regarding the understanding of quality and locality from local actors.

In our case, supermarkets do not ask for specific character products (the PGI or the organic oil) and use their power to impose rules for entering the shelves and paying and wholesalers and retail chains appear to gain most of the added value. This seems to be one of the problems of GIs in general: penetration of wider markets and retail chains forces the producers to conform to the rules of the 'big league' and disregard the advantages of GI designation. This is of wider importance and needs further investigation and analysis.

The placement (Fig. 3) reveals two different, and separated, 'worlds' of production on Lesvos: one refers to a large scale, unsuccessful firm (the UACL) that affects many farmers on the island and markets both conventional and PGI olive oil. Its failure is reflected by the high percentage of oil sold in bulk at low prices, by the low percentage of PGI oil bottled and sold as such, and by the fact that it is not concerned with organic oil at all. Besides its economic failure, it does not provide socially an outlet where the opinions of farmers can be heard and new initiatives could be discussed and planned, although it is a union of cooperatives. Currently it is a bureaucratic, in debt and slow organisation, trapped in its own conventions of a 'way to do things'. The other 'world' is that of small scale family firms, successful but affecting few farmers. Here, conventional, organic and PGI olive oil is sold, with the most successful ones being organic firms. A few of the small firms that sell conventional oil are classified as successful, although they make most of their profits by the oil they sell in bulk. All firms offer similar prices to farmers, resulting in mixed overall economic impacts and not providing incentives to more farmers to enter this second world as their suppliers.

The answer to the question of economic, social and environmental valorisation of the three oils and especially the PGI and the organic seems straightforward: the products clearly have a symbolic and social value and are linked with the island, but most of the actors, both in and out of the chain, fail to capitalize on it and reap its full potential. This is attributed by the actors themselves to external factors ('the market', 'the retailers') and to geographical features ('isolated island' or the 'mountainous plantations') and no one questions established conventions or seems to wonder if a different way of managing things could work better.

## Conclusion

In this paper we focus on the economic, social and environmental valorisation of a local asset of great economic and symbolic importance for a peripheral – disadvantaged area: the olive oil of Lesvos Island in Greece, by analyzing and comparing with a

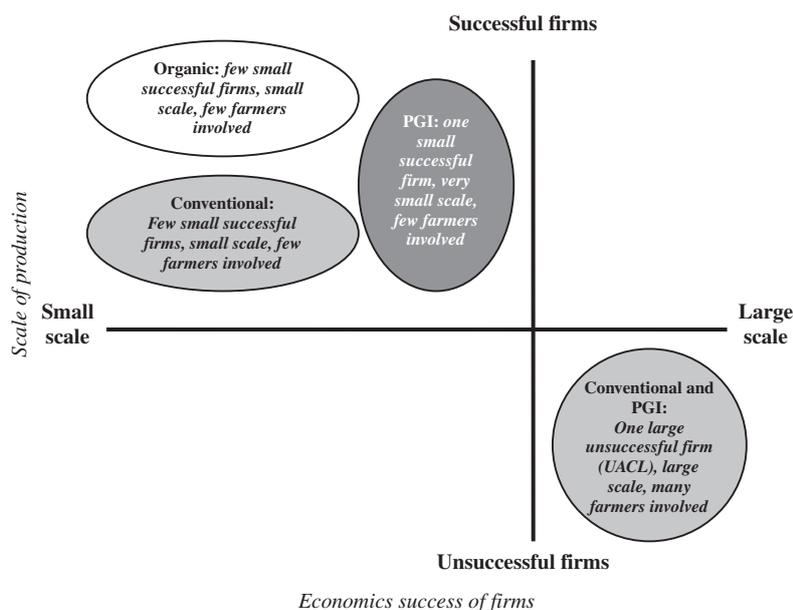


Fig. 3. Worlds of production for conventional, organic and PGI olive oil of Lesvos according to their scale of production and the economic success of producing firms.

scale/success typology the supply chains of three different olive oil products in the area: PGI, organic and conventional. Two issues emerge:

The first is subsidies: they are very important for farmers, especially since very few are willing or able to sell their olive at better prices. The fact that many of them are part-timers and seek to produce their own oil and break even with collecting and managing the plantations expenses, make them even more important. All these subsidies, the LFAs scheme, the SFP and the GIs legislation, support farmers almost regardless of their choices and the end product, mostly for social (keeping an important activity and ensuring livelihoods) and environmental (conservation of resources and biodiversity) reasons. But, in our case study and many peripheral – disadvantages areas, they seem unable to result in effective economic valorisation of the end product. It is true that today farmers have to be able to play multiple roles in a very competitive market: agronomists, conservationists, processors, marketers and sellers. Very few can do that. The new CAP theoretically supports more ‘active’ forms of funding through rural development measures and not direct payments, but the goals should be more oriented towards facilitating all these roles and increasing economic valorisation locally and common management or at least common understanding, which could improve the distribution of benefits in favour of farmers and producers.

The second deals with the issue of GIs and the scale of production. Smaller producers enjoy relatively more freedom in choosing between supply chains that exclude large retailers and in these chains quality and geographical indication seem to work. On the contrary, large bottlers may have greater negotiating power due to their size, but have to comply with demanding retailers and compete on an international level. In this context, the PGI is theoretically a useful tool, but its existence does not warranty success and positive impacts to the designated area. This is linked with all previous conclusions: the CAP and subsidies, common management and the conceptual framework developed here. Even though our research approach had to settle for a more qualitative assessment of economic, social and environmental valorisation along the supply chain due to the complexity of the chains and the unavailability of quantitative data, the conceptual framework with the size/economic success typology (Fig. 1) was very helpful in

highlighting different worlds, considering size, the impacts to the area, issues of social valorisation and the number of local actors involved.

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